

Notice of Allowability

Application No.

10/521,021

Examiner

Alan A. Mathews

Applicant(s)

TOYODA, MITSUNORI

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed 12/07/07 and a phone interview on 1/09/08.
2. ☒ The allowed claim(s) is/are 19-34 and 37-58.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 1/10/08.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Backenstose on January 9, 2008.

The application has been amended as follows:

In the claims, cancel claim 59.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

The prior art does not disclose or suggest wherein a parameter β satisfies the following conditions:

$$\beta < 0.2 \text{ (where } \beta = (\gamma-1)^3 \cdot NA^2/\Delta n^2 \text{)}$$

where a a refracting power ratio ϕ_a/ϕ_b between ϕ_a , a refracting power of the first minute refraction surfaces, and ϕ_b , a refracting power of the second minute refraction surfaces,

is γ , numerical aperture on the emission side of the optical integrator is NA, and a difference between a refraction index of a medium on a light entrance side of the second minute refraction surfaces and a refraction index of a medium on a light emission side of the second minute refraction surfaces is Δn ., in combination with all the other elements recited in independent claims 19.

The prior art does not disclose or suggest wherein the optical integrator is used for light having a wavelength of 300nm or less, wherein the optical material forming the first optical member includes fluorite, and wherein the optical material forming the second optical member includes silica glass in combination with all the other elements recited in independent claim 33.

The prior art does not disclose or suggest wherein a parameter β satisfies the following conditions:

$$\beta < 0.2 \text{ (where } \beta = (\gamma-1)^3 \cdot NA^2/\Delta n^2 \text{)}$$

where a refracting power ratio ϕ_a/ϕ_b between ϕ_a , a refracting power of the first minute refraction surfaces in terms of a non-scanning direction optically approximately perpendicular to the scanning direction and ϕ_b , a refracting power of the second minute refraction surfaces in terms of the non-scanning direction is γ , numerical aperture on the emission side in terms of the non-scanning direction of the optical integrator is NA, and a difference between a refraction index of a medium on a light entrance side of the second minute refraction surfaces and a refraction index of a medium on a light emission side of

the second minute refraction surfaces is Δn ., in combination with all the other elements (claim 46) or steps (claims 47, 50, and 54) recited in each of independent claims 46, 47, 50, and 54.

The prior art does not disclose or suggest wherein the radiation from the source includes light having a wavelength of 300 nm or less, wherein the optical material forming the first optical member includes fluorite, and wherein the optical material forming the second optical member includes silica glass in combination with all the other steps recited in each of independent claim 52 and 58.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan A. Mathews whose telephone number is (571) 272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571) 272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alan A. Mathews
Primary Examiner
Art Unit 2851

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